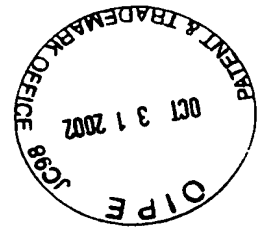


FIG. 1



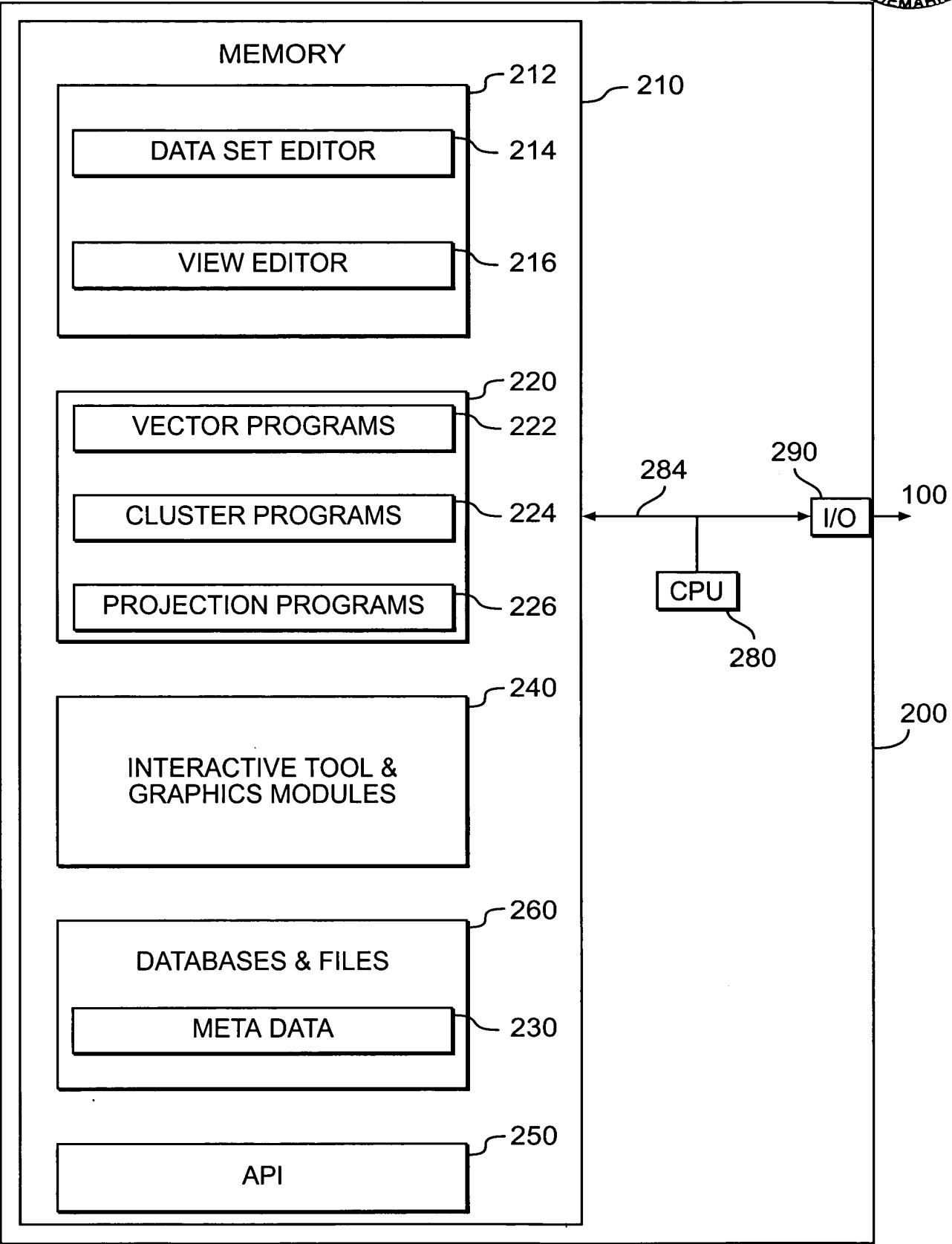


FIG. 2A

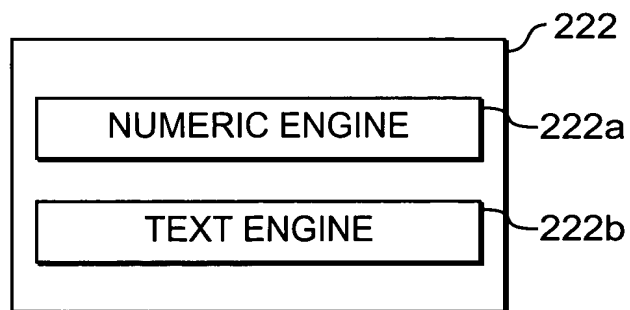


FIG. 2B

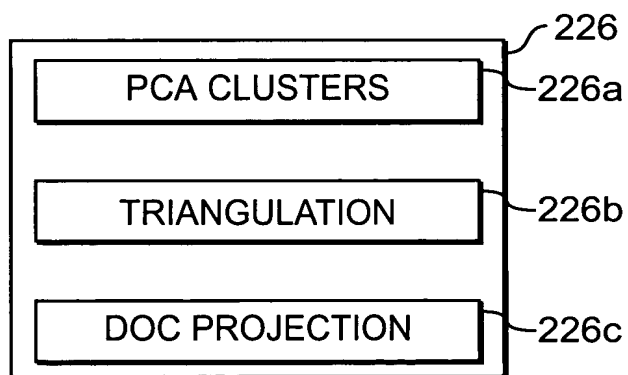


FIG. 2D

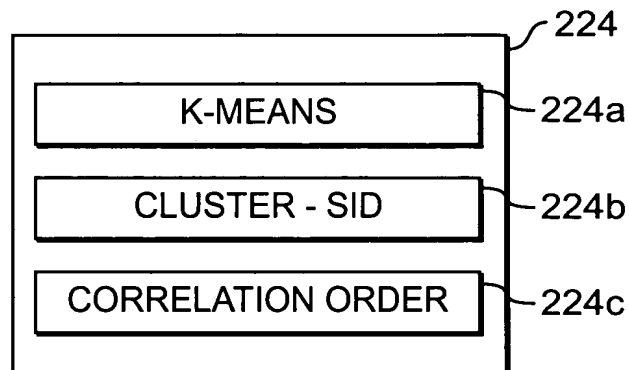


FIG. 2C

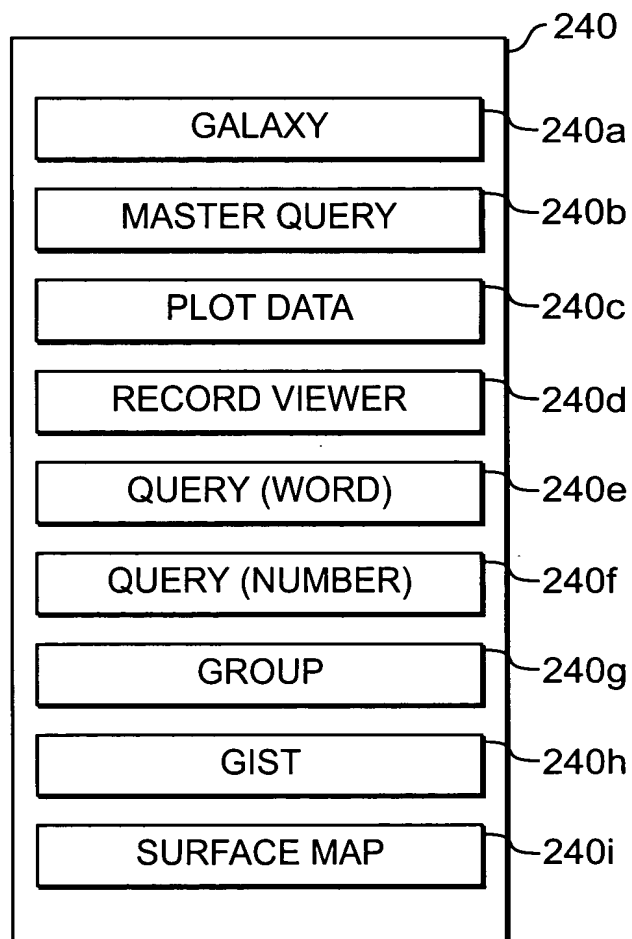


FIG. 2E

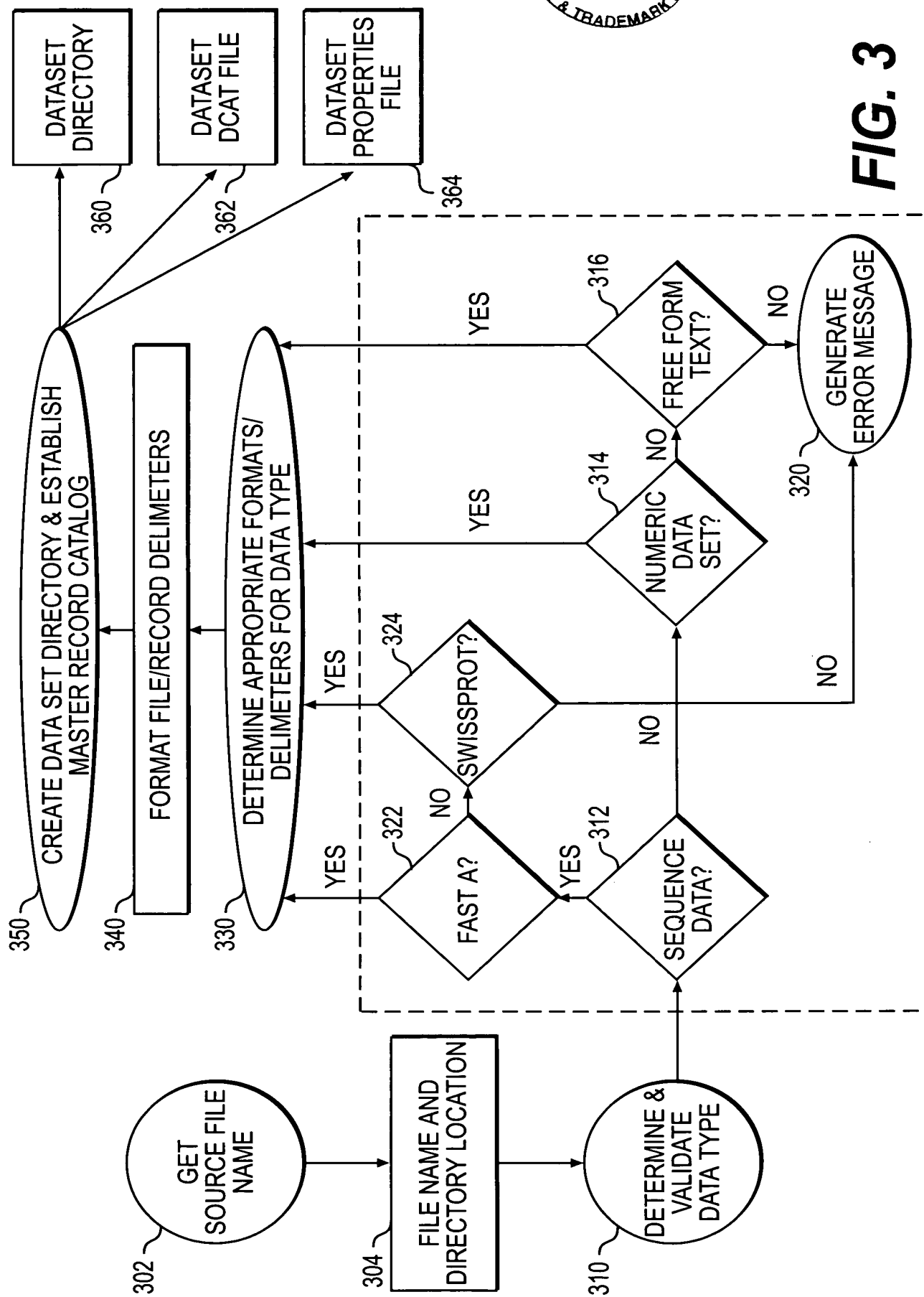


FIG. 3



400

410

NEW DATA SET

1. SOURCES

2. FORMAT

DATA SET NAME:

TEXT.1

DATA SET TYPE:



ARRAY DATA



PROTEIN OR NUCLEOTIDE SEQUENCES



TEXT

DATA SET SOURCES:

/HOME/BATTELLE/OMNIVIZ_DATA/SOURCES/YEAST.CELL.CYCLE/CC.PROT.785.FASTA

ADD...

VIEW...

DELETE

424

CANCEL

SAVE DATA SET

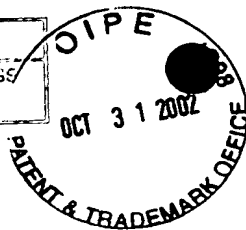
CONTINUE TO NEW VIEW

HELP

426

428

FIG. 4A



440

NEW DATA SET

1. SOURCES 2. FORMAT

FIELD DELIMITER:

☐ COLON

☐ COMMA

☐ SPACE

☒ TAB

☐ USER DEFINED USER DEFINED DELIMITER:

CANCEL SAVE DATA SET CONTINUE TO NEW VIEW HELP

442



FIG. 4B

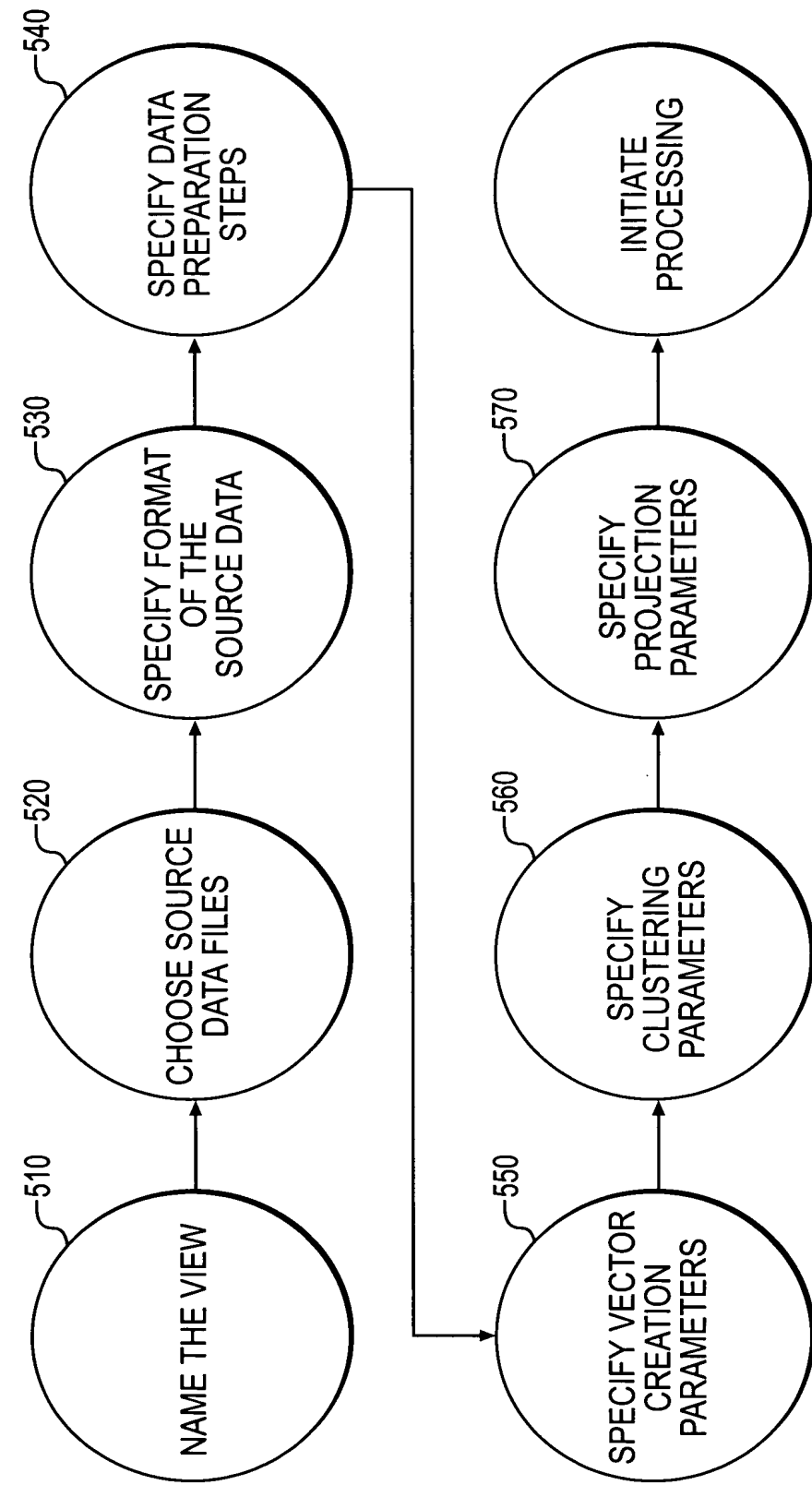
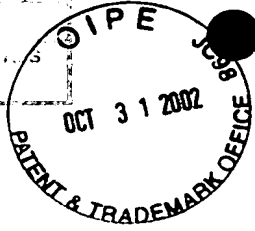


FIG. 5A



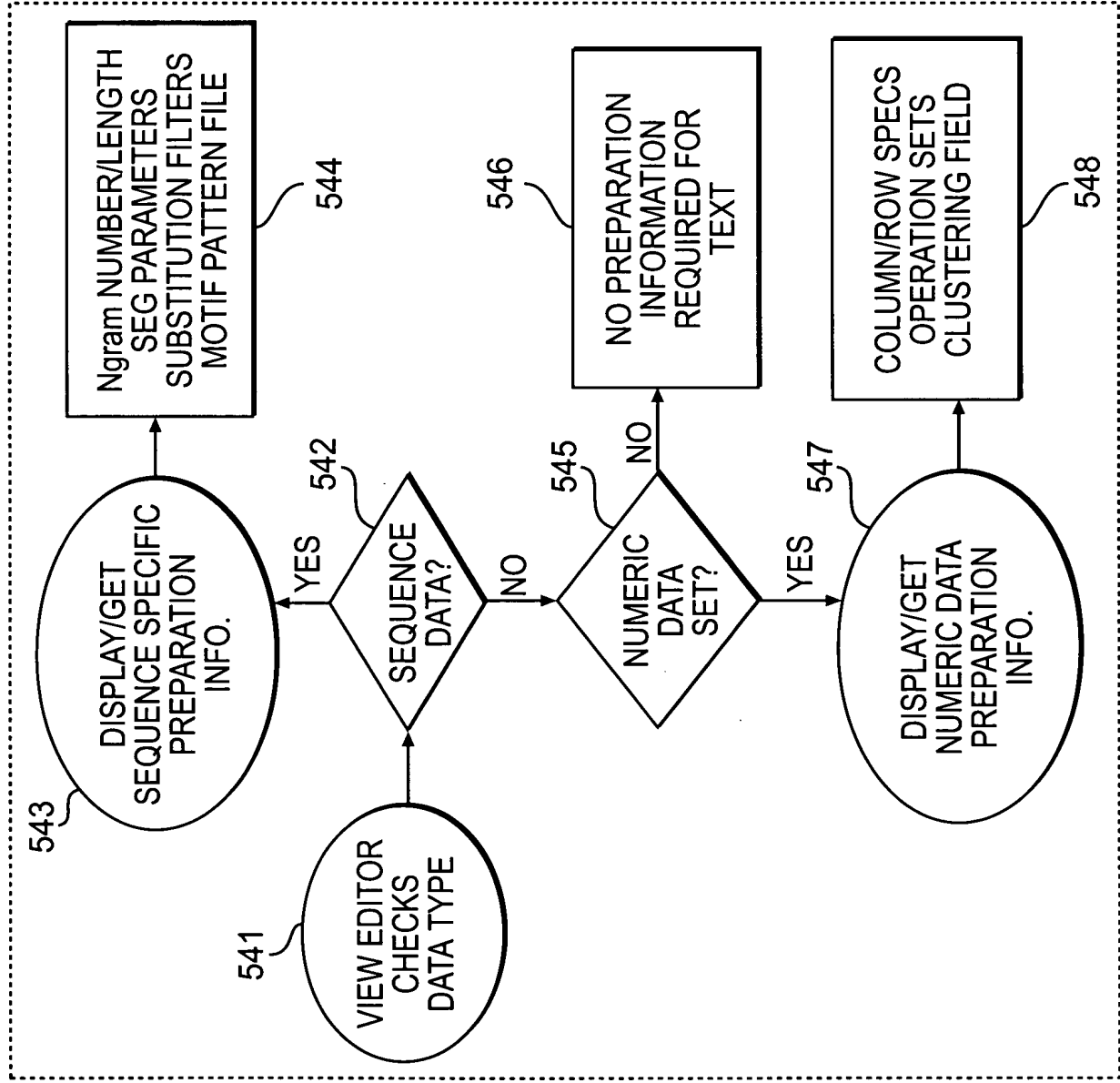


FIG. 5B



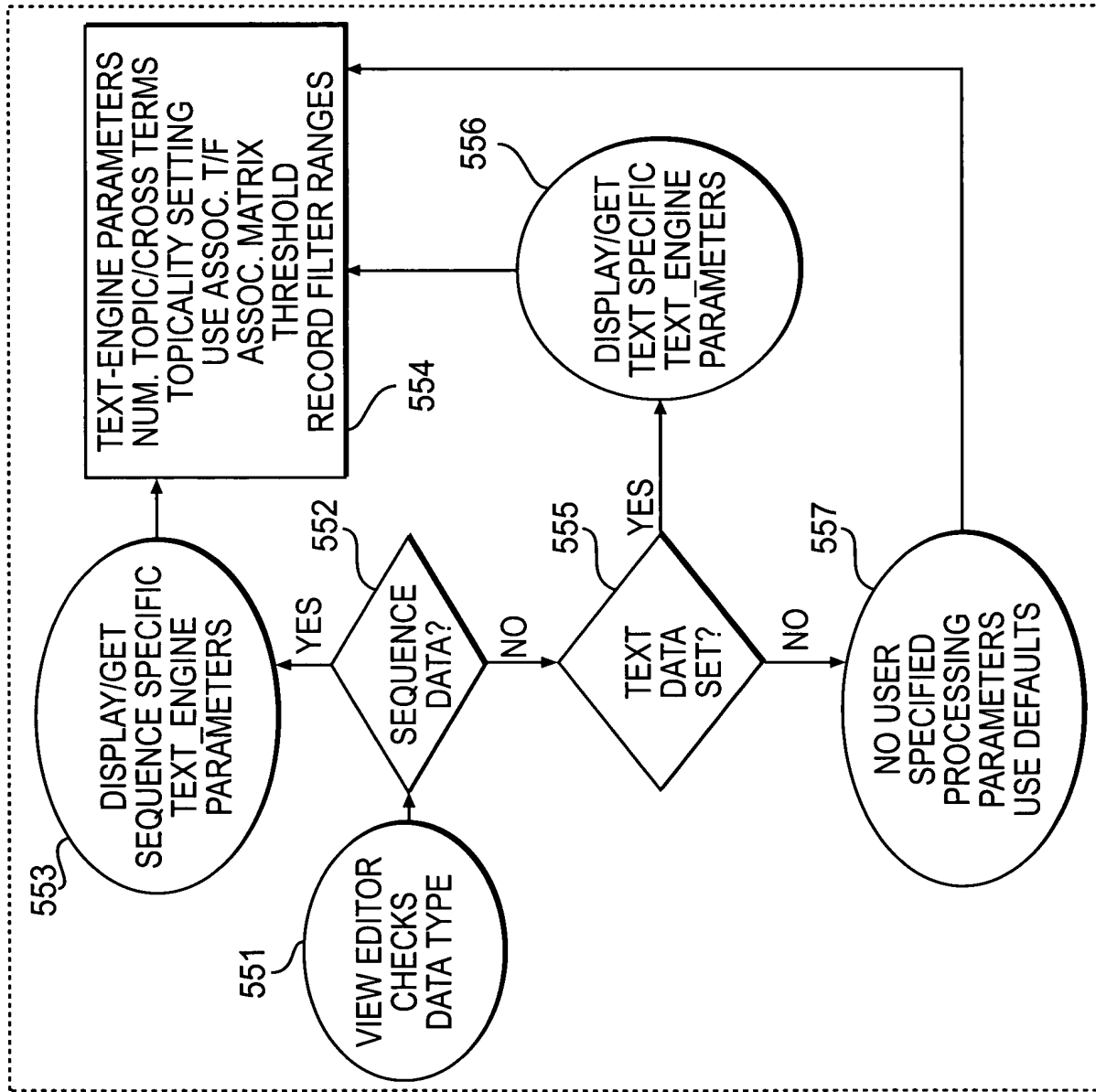


FIG. 5C

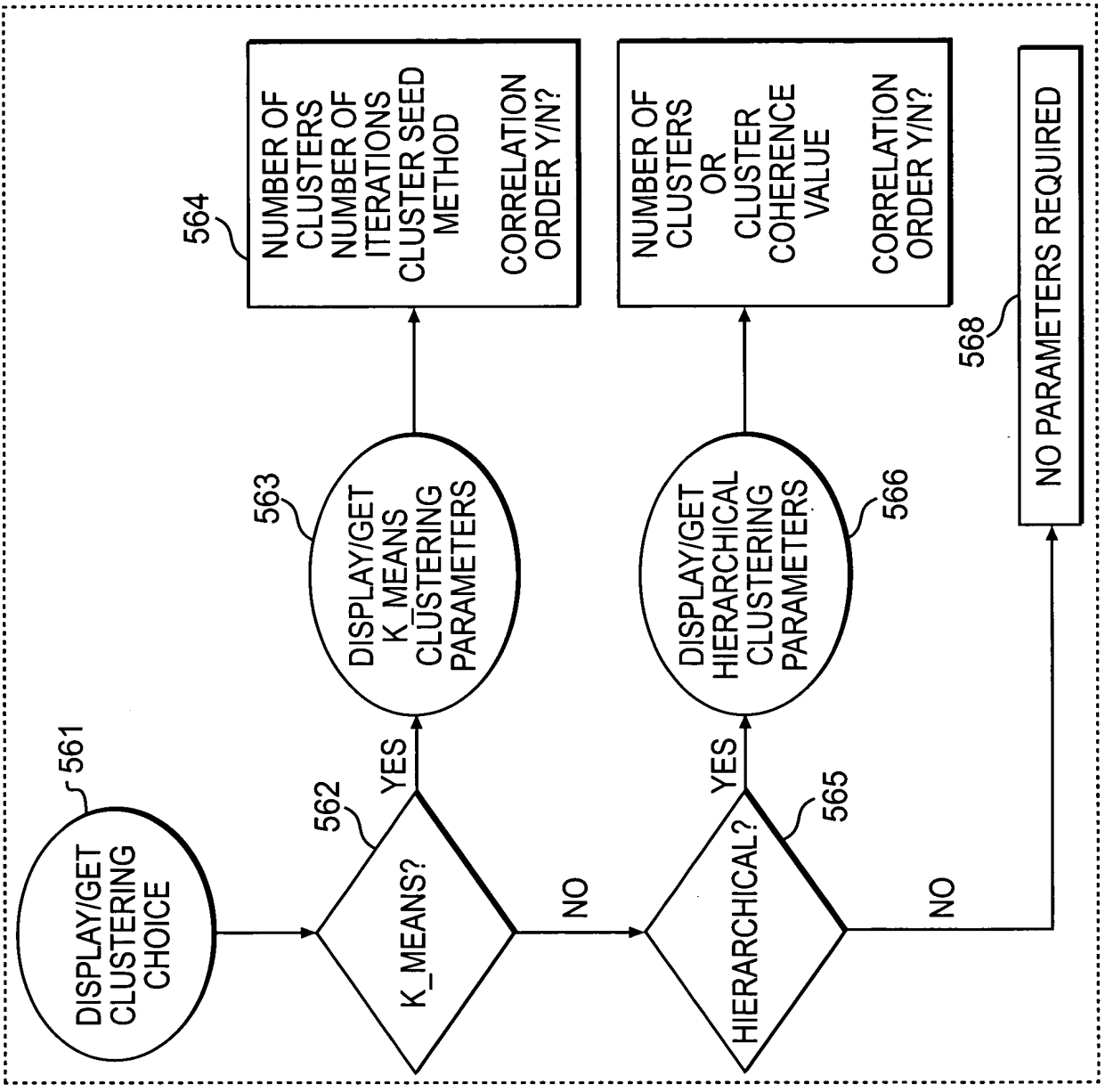
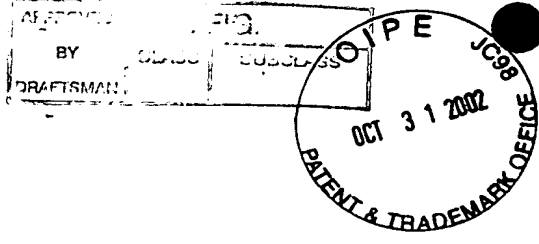


FIG. 5D





NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME:

2. SOURCE FILES: 3. FORMAT 4. PREPARATION 5. PROCESSING 6. CLUSTERING 7. PROJECTION

610

612

614

616

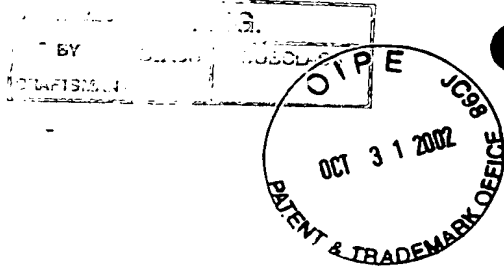
620 622

620 622

620 622

CANCEL << PREVIOUS NEXT >> PROCESS LATER PROCESS NOW HELP

FIG. 6A



602 NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME: NEW VIEW 1

2. SOURCE FILES 3. FORMAT 4. PREPARATION 5. PROCESSING 6. CLUSTERING 7. PROJECTION

DATA SET SOURCE FILES:

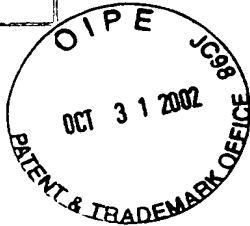
DATA VIEW SOURCE FILES:

606 T:\HOME\BATTELLE\OMNIVIZ_DATA\SOURCES\TEXT\APOPOP.DISEASE.ML

ADD REMOVE VIEW...

608 CANCEL << PREVIOUS NEXT >> PROCESS LATER PROCESS NOW HELP

FIG. 6B



NEW VISUAL ANALYSIS: GE.775

1. VIEW NAME:

2. SOURCE FILES

4.1 DATA SPECIFICATION

☐ TRANSPOSE DATA FILES

RECORD TITLE COLUMNS:

FIELD NAME	COLUMN(S)	DATA TYPE
NUMERIC FIELD NAME 1	1-3	NUMERIC
CATAGORICAL FIELD NAME 2	11-12	CATAGORICAL
SEQUENCE	10	SEQUENCE
TEXT FIELD NAME 2	4-5	TEXT

☒ USE SINGLE COLUMN HEADING FOR FIELD NAMES

FIG. 6C

NEW VISUAL ANALYSIS: GE.775

1. VIEW NAME: NEW VIEW

2. SOURCE FILES

3. FORMAT

4. PREPARATION

5. PROCESSING

6. CLUSTERING

7. PROJECTION

4.1 DATA SPECIFICATION

4.2 OPERATION SET

4.3 CLUSTERING SELECTION

OPERATION SET NAME	NUMERIC FIELD	OPERATIONS
OPERATION SET 1	NUMERIC FIELD NAME 1	RECIPROCAL LOG(10)

NEW OPERATION SET

REMOVE OPERATION SET

AVAILABLE OPERATIONS

LOG(10)

IN

LOG(2)

ANTILOG(10)

ANTILOG(2)

ANTIIN

ADD OP

REMOVE OP

CURRENT OPERATION SEQUENCE

RECIPROCAL
LOG(10)

CANCEL

<< PREVIOUS

NEXT >>

PROCESS LATER

PROCESS NOW

HELP

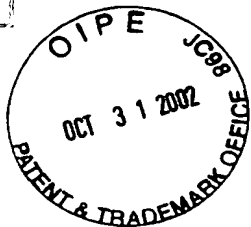


FIG. 6D

NEW VISUAL ANALYSIS: GE.775

1. VIEW NAME: NEWVIEW

2 SOURCE FILES

3 FORMAT

4. PREPARATION

5. PROCESSING

6 CLUSTERING

7 PROJECTION

4.1 DATA SPECIFICATION

4.2 OPERATION SET

4.3 CLUSTERING SELECTION 650

PLEASE SELECT WHICH FIELD/TRANFORM ON WHICH TO CLUSTER

OPERATION SET1

OPERATION SET1
NUMERIC FIELD NAME1

CANCEL

<< PREVIOUS

NEXT >>

PROCESS LATER

PROCESS NOW

HELP

FIG. 6E



NEW VISUAL ANALYSIS: YEAST.CELL.CYCLE

1. VIEW NAME: NEW PROTEIN VIEW

2. SOURCE FILES

3. FORMAT

4. PREPARATION

5. PROCESSING

6. CLUSTERING

7. PROJECTION

4.1 MOTIFS/INGRAMS

4.2 COMPLEXITY FILTERING

4.3 EXCLUSIONS

4.4 AMINO ACID SUBSTITUTIONS

☒ SINGLE MOTIF OUTPUT

MOTIF PATTERN FILES

/HOME/BATTELLE/PROSITE.MOTIFS

ADDDELETE

MOTIF PARAMETERS

NGRAM LENGTHS/MINIMUM FREQUENCIES

11

21

31

41

51

61

71

81

91

101

CANCEL

<< PREVIOUS

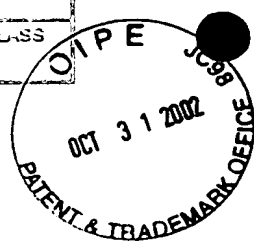
NEXT >>

PROCESS LATER

PROCESS NOW

HELP

FIG. 6F



NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME: NEW VIEW 1

2 SOURCE FILES 3 FORMAT 4 PREPARATION 5. PROCESSING 6 CLUSTERING 7 PROJECTION

TOPICALITY METHOD: SPECIFY SETTINGS BY NUMBER OF TERMS

WEAK

0.00

0.20

1.00

STRICT

☐ DO NOT USE ASSOCIATIONS

REQUESTED NUMBER OF TOPICS: 200

REQUESTED NUMBER OF CROSS TERMS: 2000

TOPICS MUST APPEAR IN 20 BUT NO MORE THAN RECORDS.

CROSS TERMS MUST APPEAR IN 20 BUT NO MORE THAN RECORDS.

CANCEL

<< PREVIOUS

NEXT >>

PROCESS LATER

PROCESS NOW

HELP

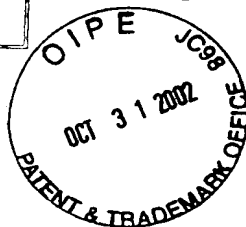


FIG. 6G

NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME: NEW VIEW 1

2. SOURCE FILES

3. FORMAT

4. PREPARATION

5. PROCESSING

6. CLUSTERING

7. PROJECTION

TOPICALITY METHOD: SPECIFY SETTINGS BY THRESHOLD

WEAK

0.00

680

STRICT

1.00

☐ DO NOT USE ASSOCIATIONS

MINIMUM TOPICALITY FOR TOPICS:

0.00

682

2.60

10.00

684

1.80

10.00

MINIMUM TOPICALITY FOR CROSS TERMS:

0.00

686a

20

686b

TOPICS MUST APPEAR IN

20

688a

20

688b

CROSS TERMS MUST APPEAR IN

CANCEL

<< PREVIOUS

NEXT >>

PROCESS LATER

PROCESS NOW

HELP

FIG. 6H



NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME: NEW VIEW 1

2. SOURCE FILES

3. FORMAT

4. PREPARATION

5. PROCESSING

6. CLUSTERING

7. PROJECTION

TOPICALITY METHOD: AUTOMATICALLY CALCULATE SETTINGS

WEAK

0.00

0.20

1.00

STRICT

☐ DO NOT USE ASSOCIATIONS

CANCEL

<< PREVIOUS

NEXT >>

PROCESS LATER

PROCESS NOW

HELP



FIG. 6I

NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME: NEWVIEW 1

2 SOURCE FILES

3 FORMAT

4 PREPARATION

5. PROCESSING

6. CLUSTERING

7 PROJECTION

TOPICALITY METHOD: AUTOMATICALLY CALCULATE SETTINGS, WITH EMPHASIS ON LOCAL TOPICS

WEAK

0.00

0.20

1.00

STRICT

☐ DO NOT USE ASSOCIATIONS

CANCEL

<< PREVIOUS

NEXT >>

PROCESS LATER

PROCESS NOW

HELP

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OCT 31 2002
JC98

FIG. 6J

NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME: NEW VIEW 1

2. SOURCE FILES3. FORMAT4. PREPARATION5. PROCESSING6. CLUSTERING7. PROJECTION

CLUSTERING METHOD: HIERARCHICAL

☐ COMPUTE CLUSTERS BASED ON COHERENCE

NUMBER OF CLUSTERS:

501500

CLUSTER COHERENCE:

70099

☒ CORRELATION ORDER AFTER CLUSTERING

CANCEL<< PREVIOUSNEXT >>PROCESS LATERPROCESS NOWHELP

FIG. 6K

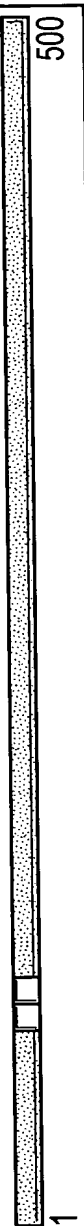


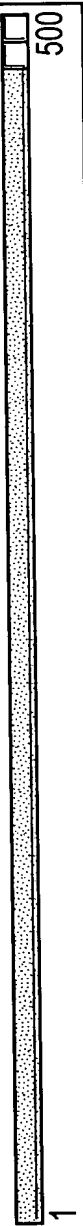
NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME:

2. SOURCE FILES 3. FORMAT 4. PREPARATION 5. PROCESSING 6. CLUSTERING 7. PROJECTION

CLUSTERING METHOD:

NUMBER OF CLUSTERS:  500

NUMBER OF ITERATIONS:  500

CLUSTER SEEDING:

☒ USE RANDOM SEEDING ☐ USE DIMENSIONAL SEEDING

☐ USE SYSTEM TIME TO SEED RANDOM NUMBER GENERATOR

RANDOM GENERATOR SEED:

☒ CORRELATION ORDER AFTER CLUSTERING



FIG. 6L

NEW VISUAL ANALYSIS: APOPTOSIS.DISEASE

1. VIEW NAME:

2. SOURCE FILES

3. FORMAT


4. PREPARATION


5. PROCESSING


6. CLUSTERING

7. PROJECTION


CLUSTER COHESION:










CLUSTER AREA:








CLUSTER SPREAD:









FIG. 6M



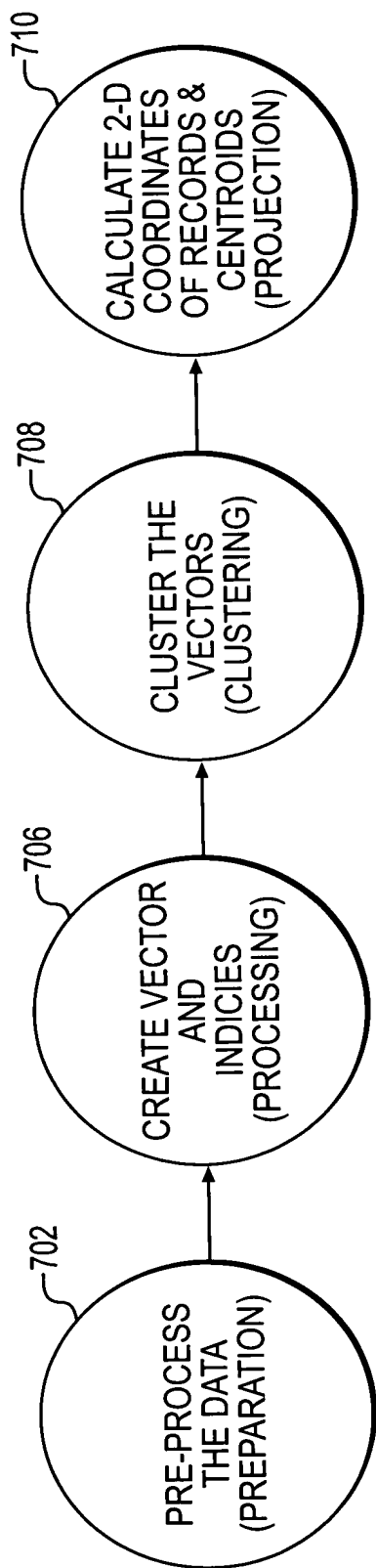


FIG. 7A



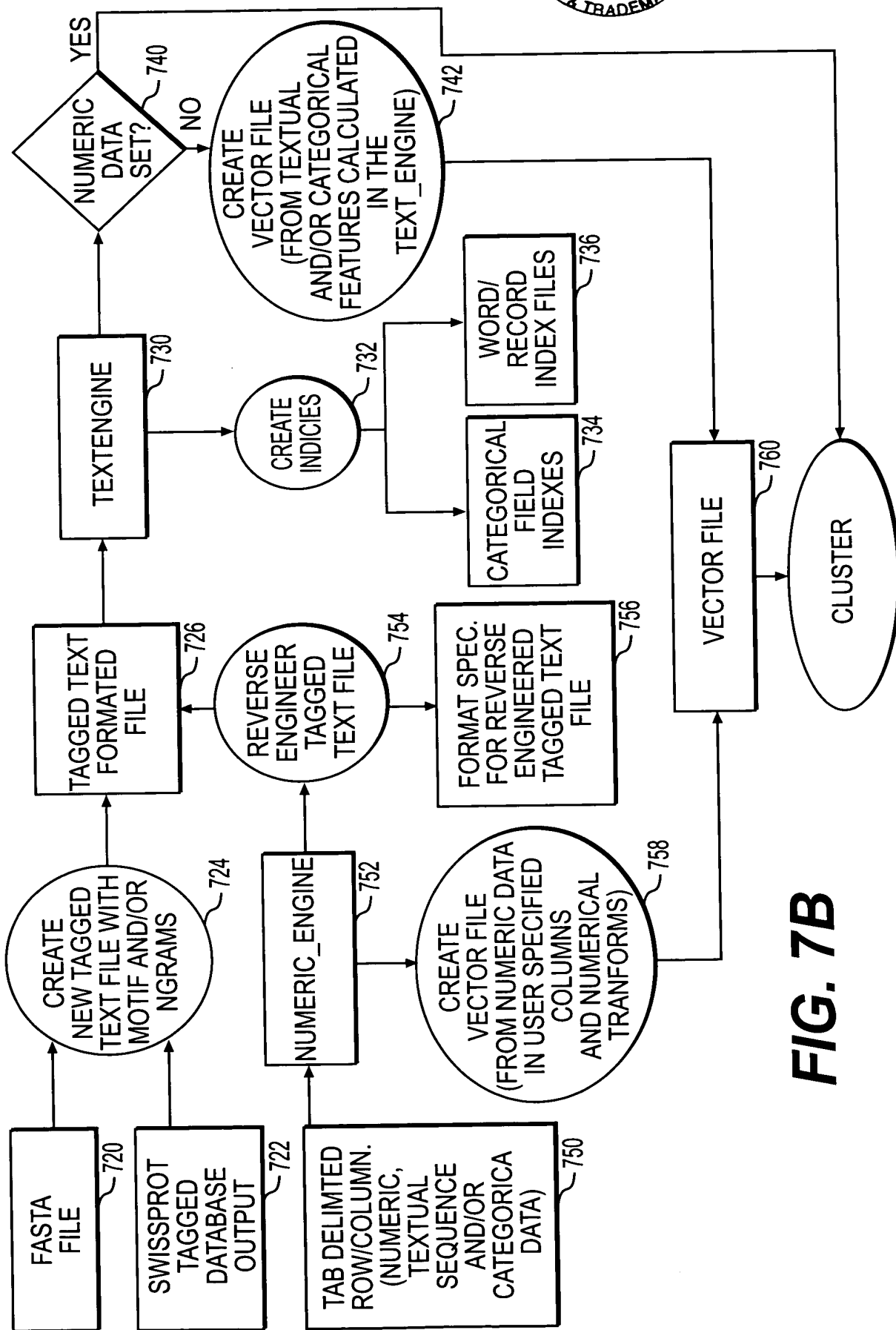


FIG. 7B

```

NAME=SPROT-ANO
DESC=SWISSPROT ANNOTATIONS
END_DESC
DELIMITER=//

;CORPUS NAME
;CORPUS DESCRIPTION

;RECORD DELIMITER TAG

;FIELD NUMBER
;NAME OF THE FIELD
;DATA TYPE OF THIS FIELD (STRING, NUMERIC, SEQUENCE)
;FIELD TAG AS IT APPEARS IN THE SOURCE FILE
;DATA IS ON A SINGLE LINE
;DON'T USE THIS FIELD FOR THE DOCUMENT VECTOR
;MAKE THIS FIELD SEARCHABLE
;USE THIS FIELD TO MAKE CATEGORIES
;CASE SENSITIVE
;THE TITLE TAG MUST BE A WORD (WHITE SPACE DELIMITED)
;THE FIELD TAG ALWAYS STARTS AT THE BEGINNING OF A LINE

IIFO
NAME=TITLE
TYPE=STRING
TAG=DE
METHOD=LINES:1
DOC_VECTOR=FALSE
SEARCH=TRUE
CORR=TRUE
CASE_SENSITIVE=TRUE
WHOLE_BOUNDARY=TRUE
LINEPOS=START
IIF1
...
IIF....

```

804

FIG. 8



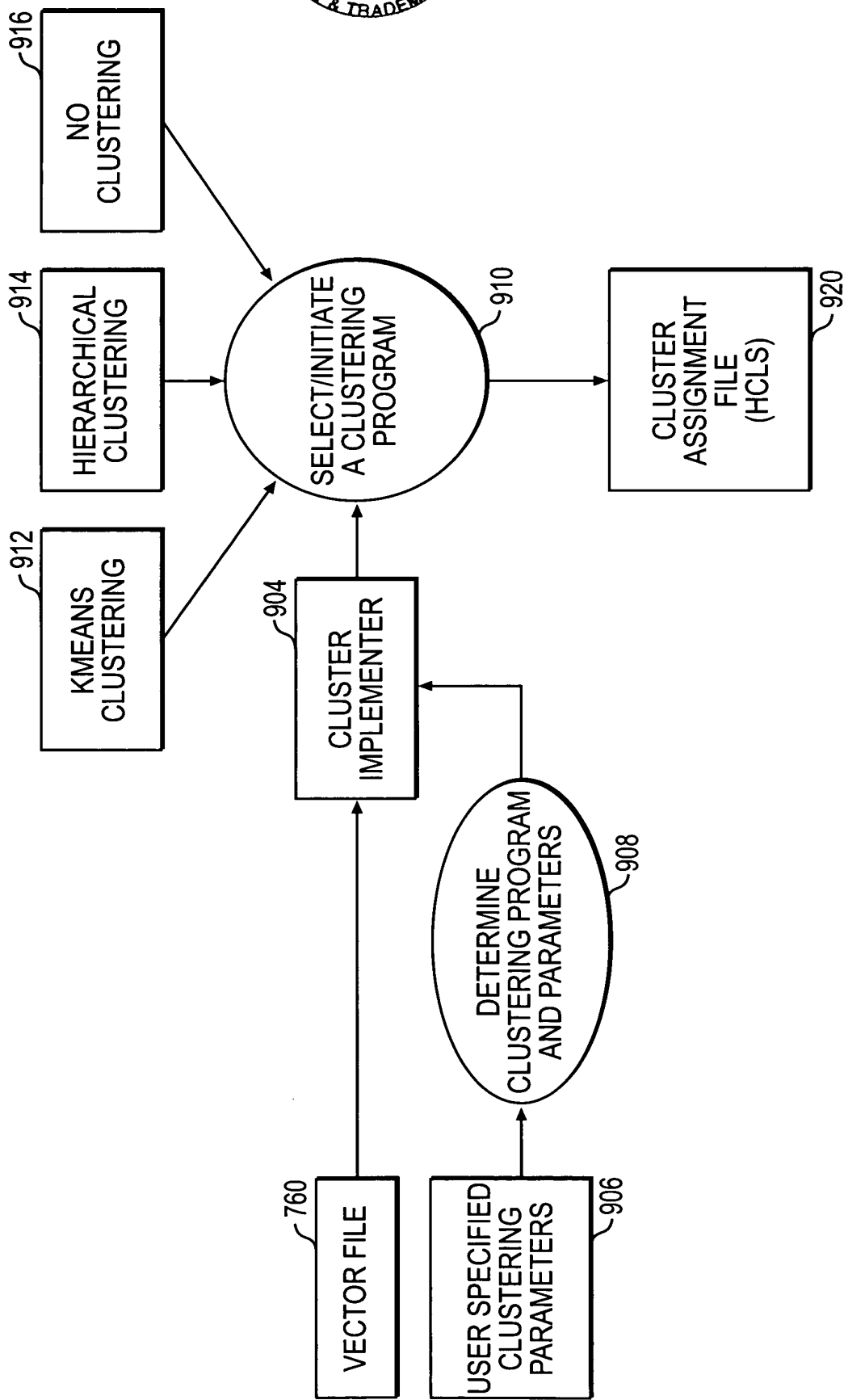


FIG. 9



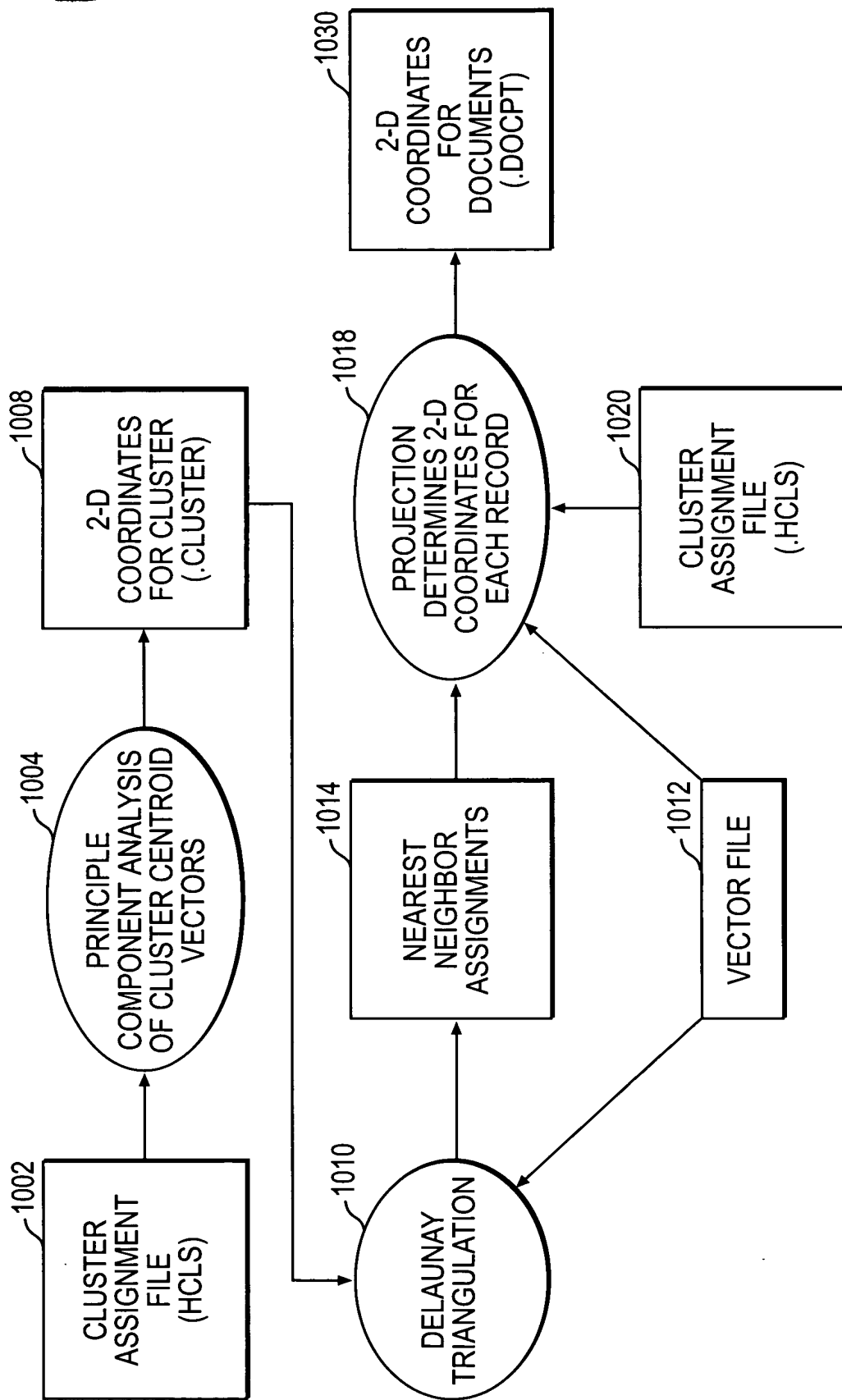
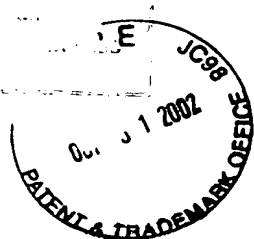


FIG. 10



CREATE READ UPDATE

FILE NAME	SET UP		PROCESSING PROGRAMS								INTERACTIVE TOOLS AND GRAPHICS								
			VECTOR CREATE				CLUSTER												
	DATASET EDITOR	VIEW EDITOR	NUMERIC_ENGINE	TEXT_ENGINE	K_MEANS	CLUSTER_SID	CORRELATIONORDER	PCA_CLUSTERS	TRIANGLE	DOCPROJECTION	GALAXY	SURFACE MAP	MASTER QUERY	PLOT DATA	RECORD VIEWER	QUERY (WORD)	QUERY (NUM)	GROUP	GIST
<DATASETNAME>.DCAT	C														R				
<DATASETNAME>.PROPERTIES	C										R								
<VIEWNAME>.CLSP		C			R	R				R									
<VIEWNAME>.CLUSTER							C		C										
<VIEWNAME>.CORRV				C								R							
<VIEWNAME>.DCAT				C										R					
<VIEWNAME>.DOCPT									C	R									
<VIEWNAME>.DOCTERM				C												R			R
<VIEWNAME>.DOCTERM_INDEX				C												R			R
<VIEWNAME>.DOCV (VECTOR)				C	R	R	R			R	R	R		R			R		
<VIEWNAME>.EDGE									C	R									
<VIEWNAME>.FIELD_OFF				C									R	R	R	R			
<VIEWNAME>.GIF			C								R								
<VIEWNAME>.GROUPS																		U	
<VIEWNAME>.FMT			C	R									R	R	R	R	R		
<VIEWNAME>.HCLS					C	C	R			R	R	R	R		R				
<VIEWNAME>.HEADINGS			C								R	R		R			R		
<VIEWNAME>.IFI				C												R			
<VIEWNAME>.IFI_INDEX				C												R			
<VIEWNAME>.PROPERTIES	U	U	U	U	U	U	U	U	U	U	R	R							
<VIEWNAME>.PUNC			C	R												R	R		
<VIEWNAME>.REL				C													R		
<VIEWNAME>.REPOSITORY											R	R	R	R	R	R	R	R	R
<VIEWNAME>.STOP			C	R													R		
<VIEWNAME>.TL				C							R	R	R	R	R	R			
<VIEWNAME>.TOPIC				C													R		
<VIEWNAME>.VOCAB				C												R			R
<VIEWNAME>.VOCAB_INDEX				C												R			R
TAB DELIMITED COLUMN/ROW SOURCE			R																
TAGGED TEXT SOURCE FILE(S)			C	R											R				
REENGINEERED TAGGED TEXT SOURCE		C	R	R											R				

FIG. 11

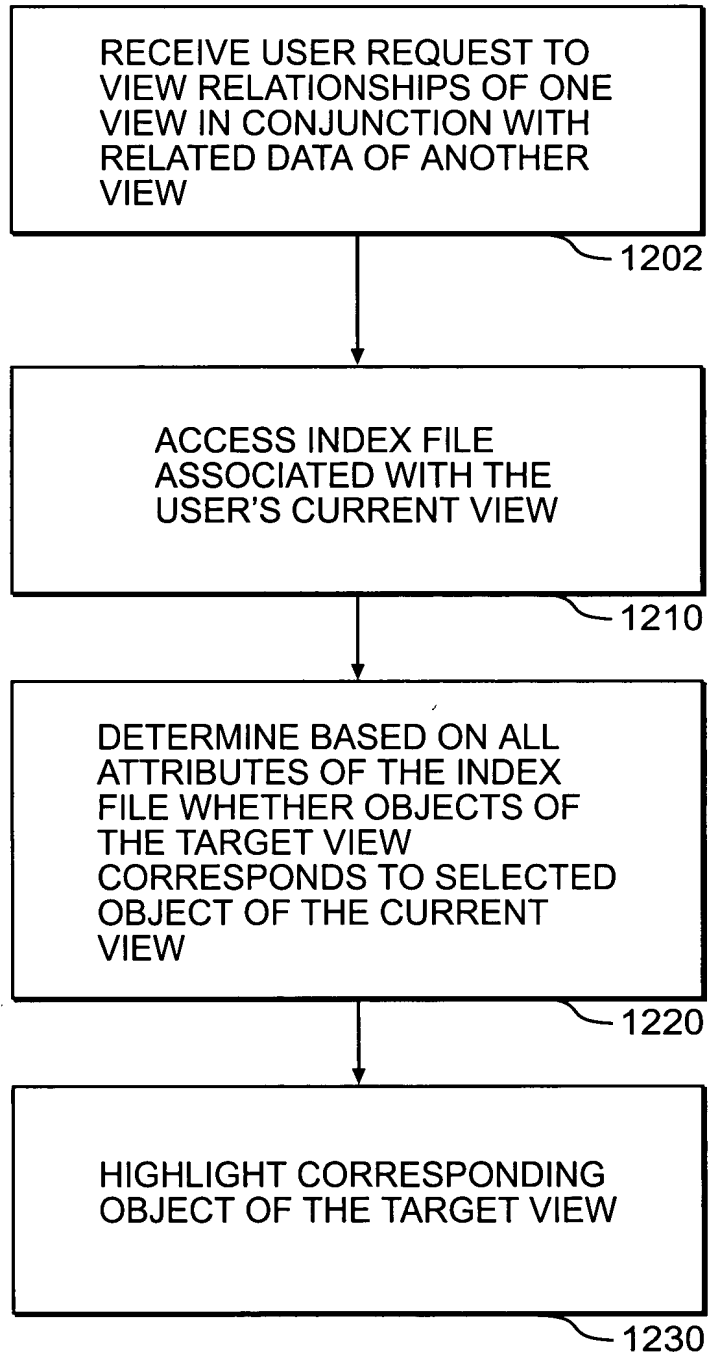


FIG. 12

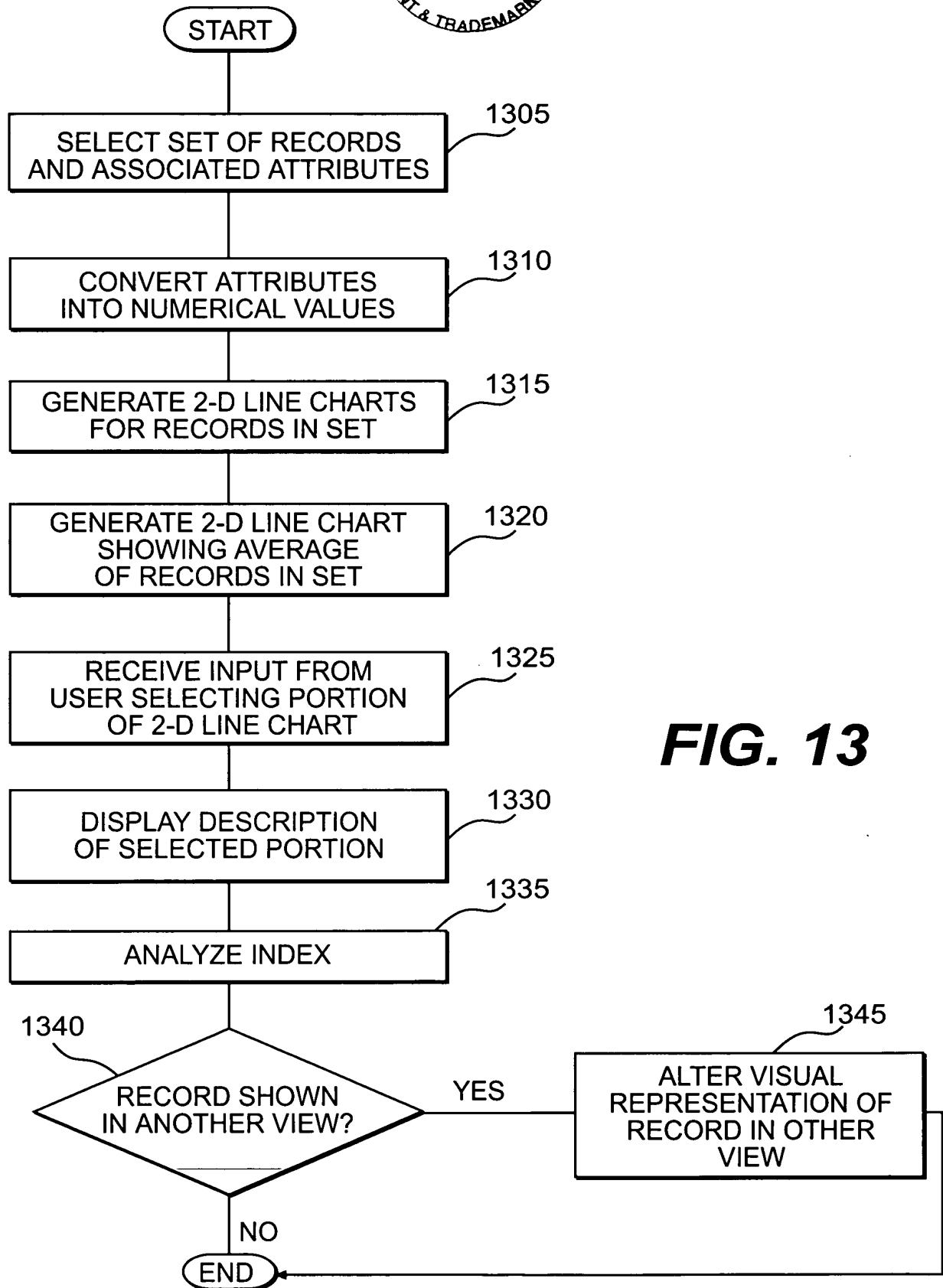
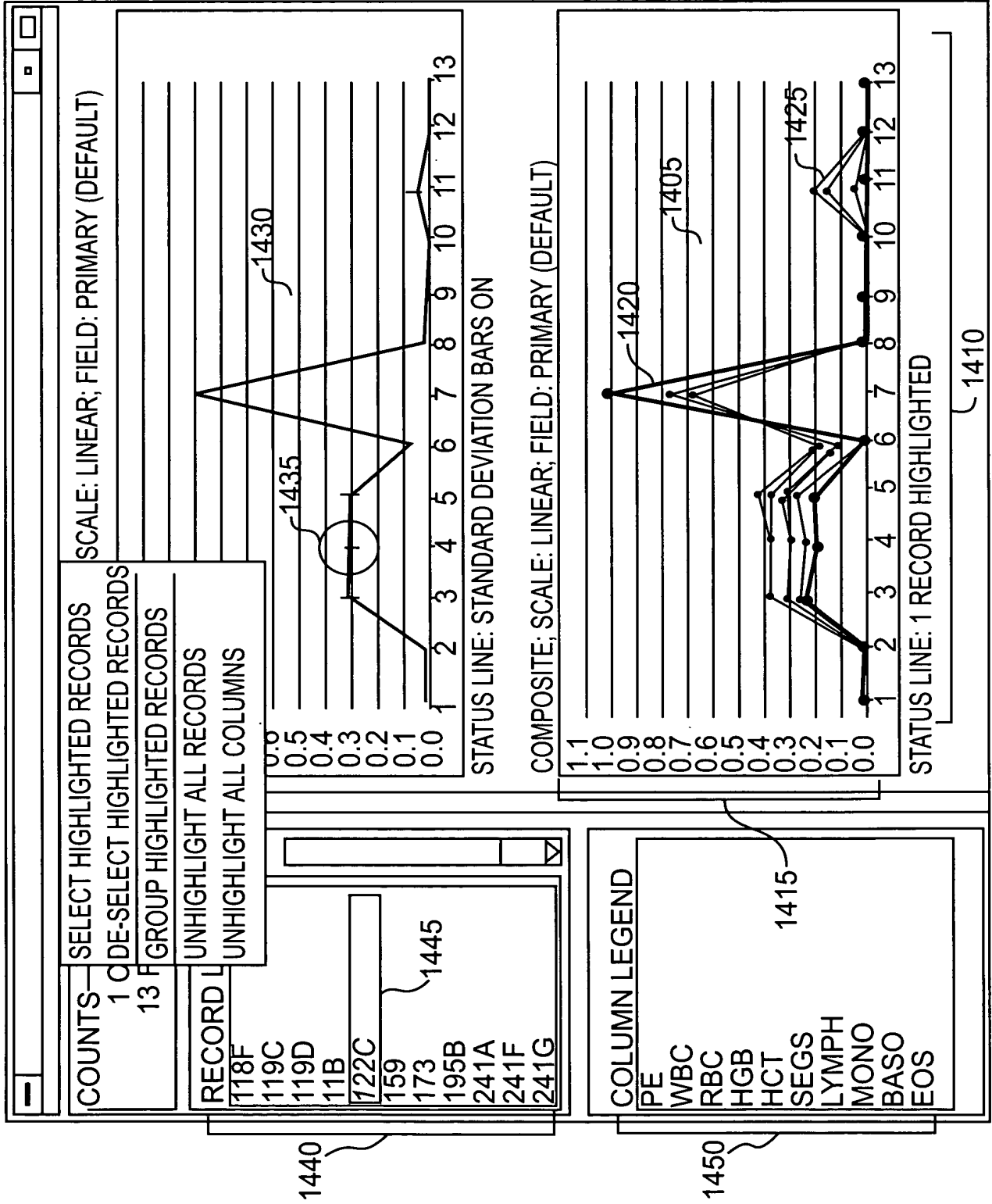


FIG. 13



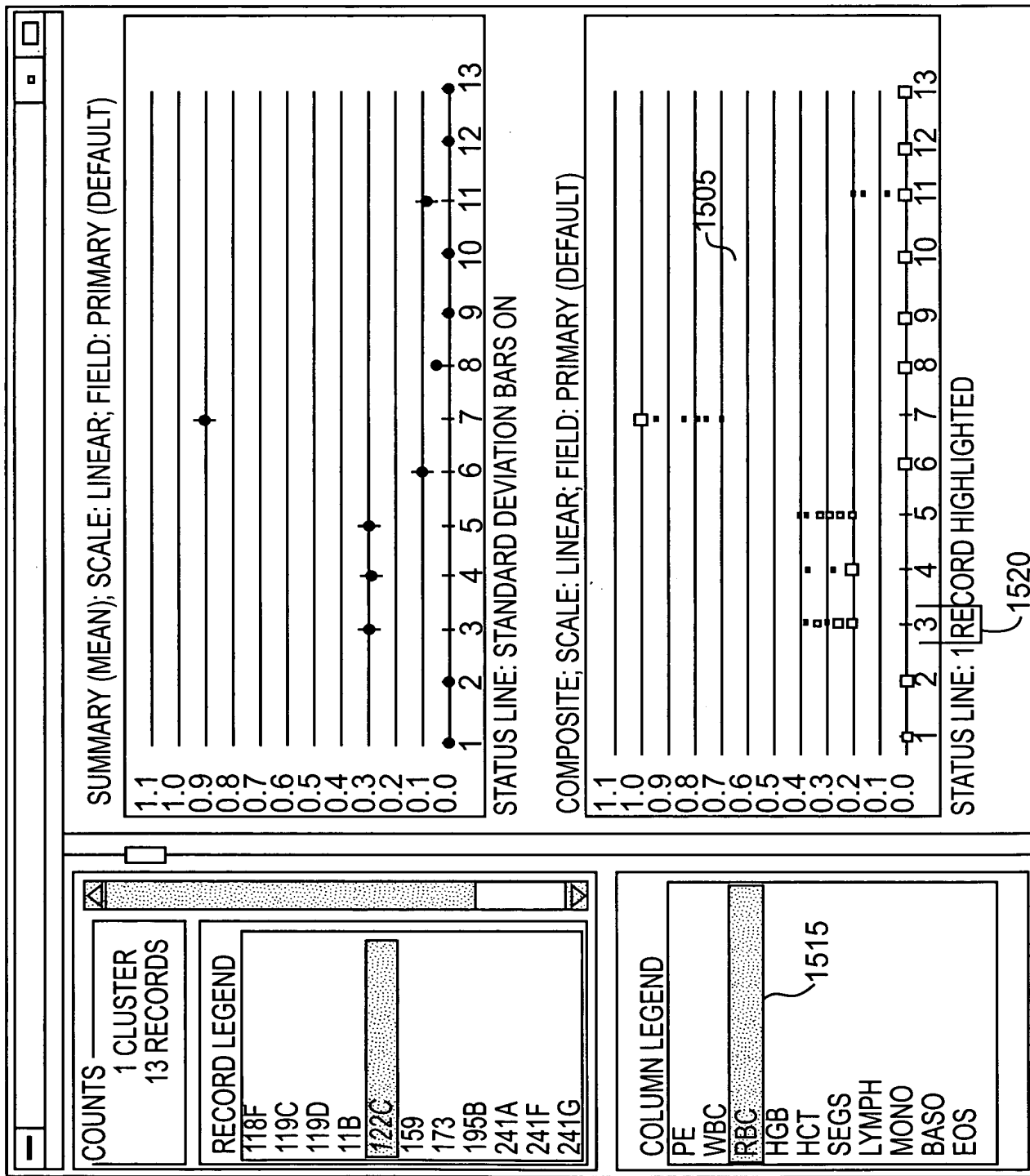


FIG. 15



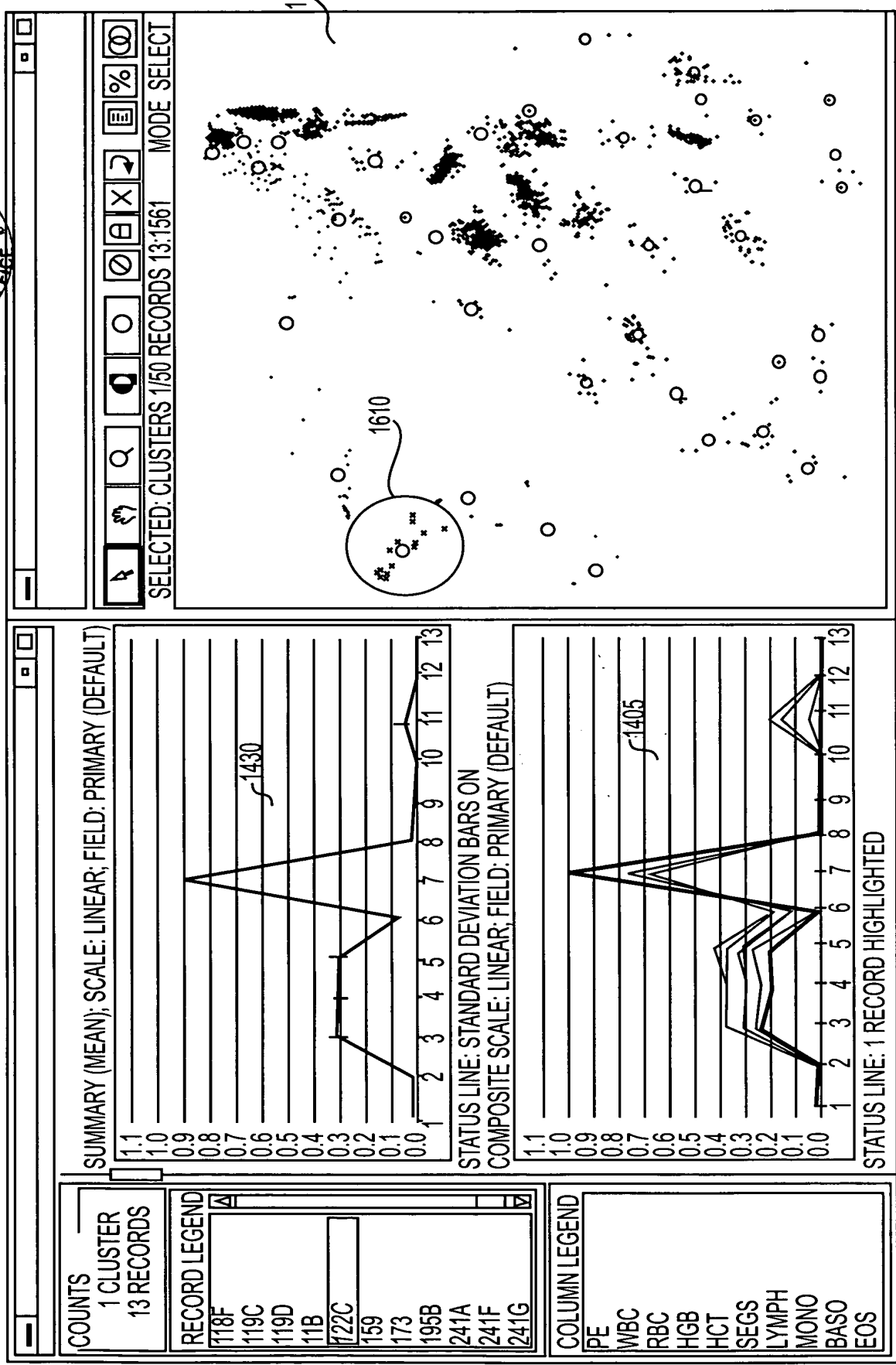
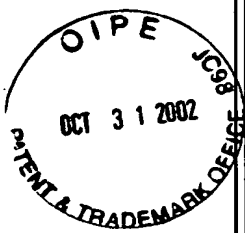


FIG. 16

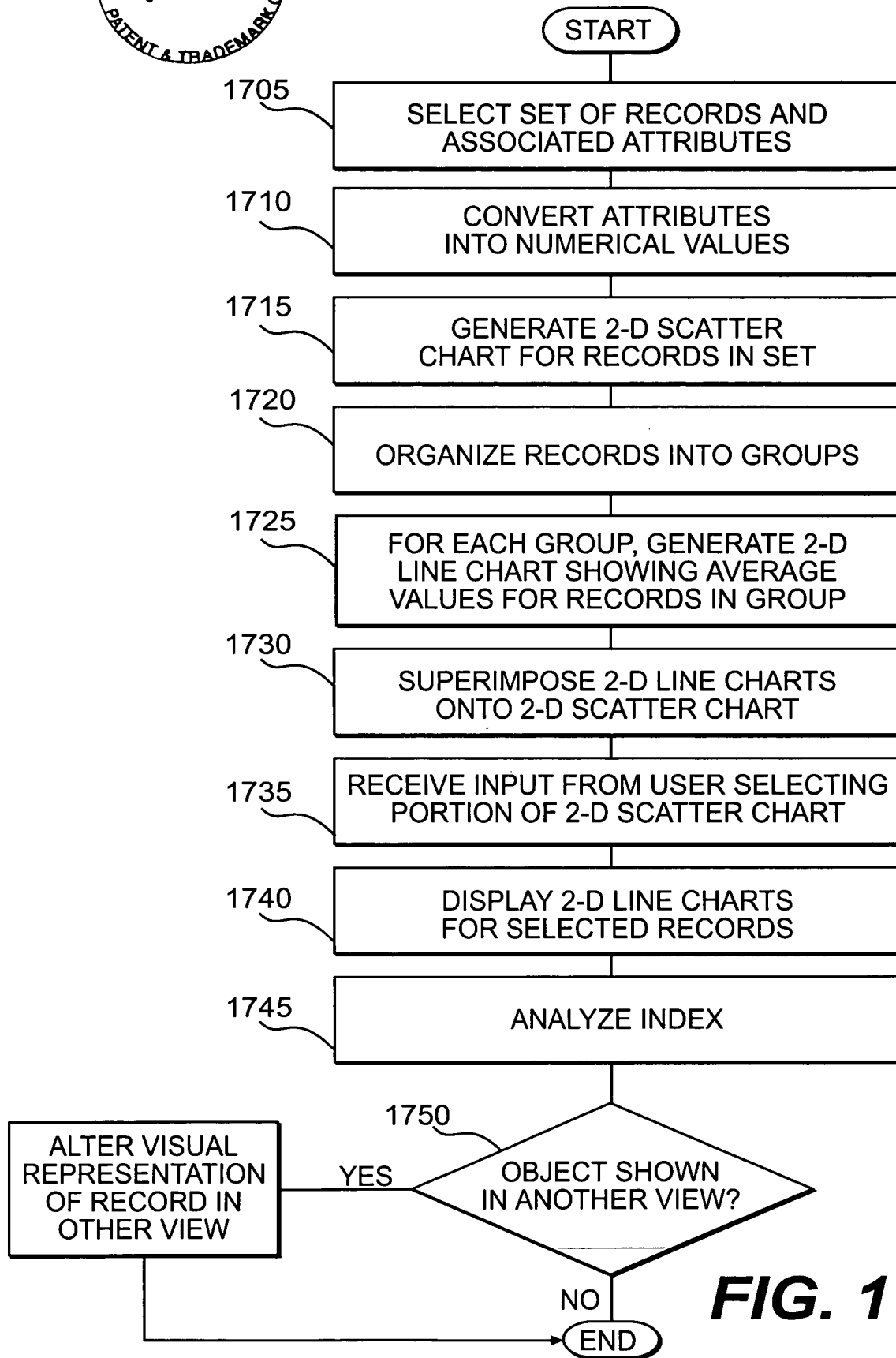


FIG. 17

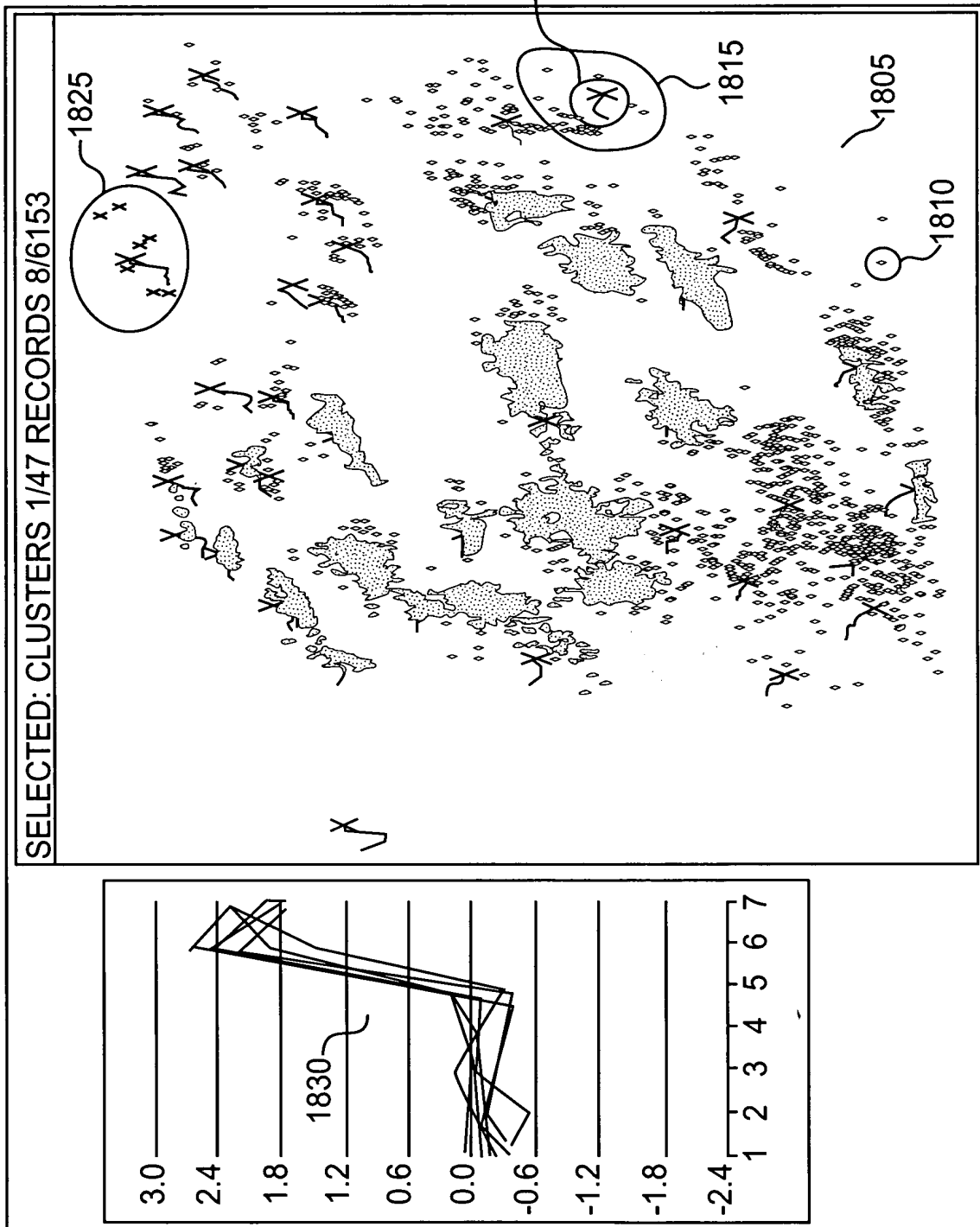


FIG. 18

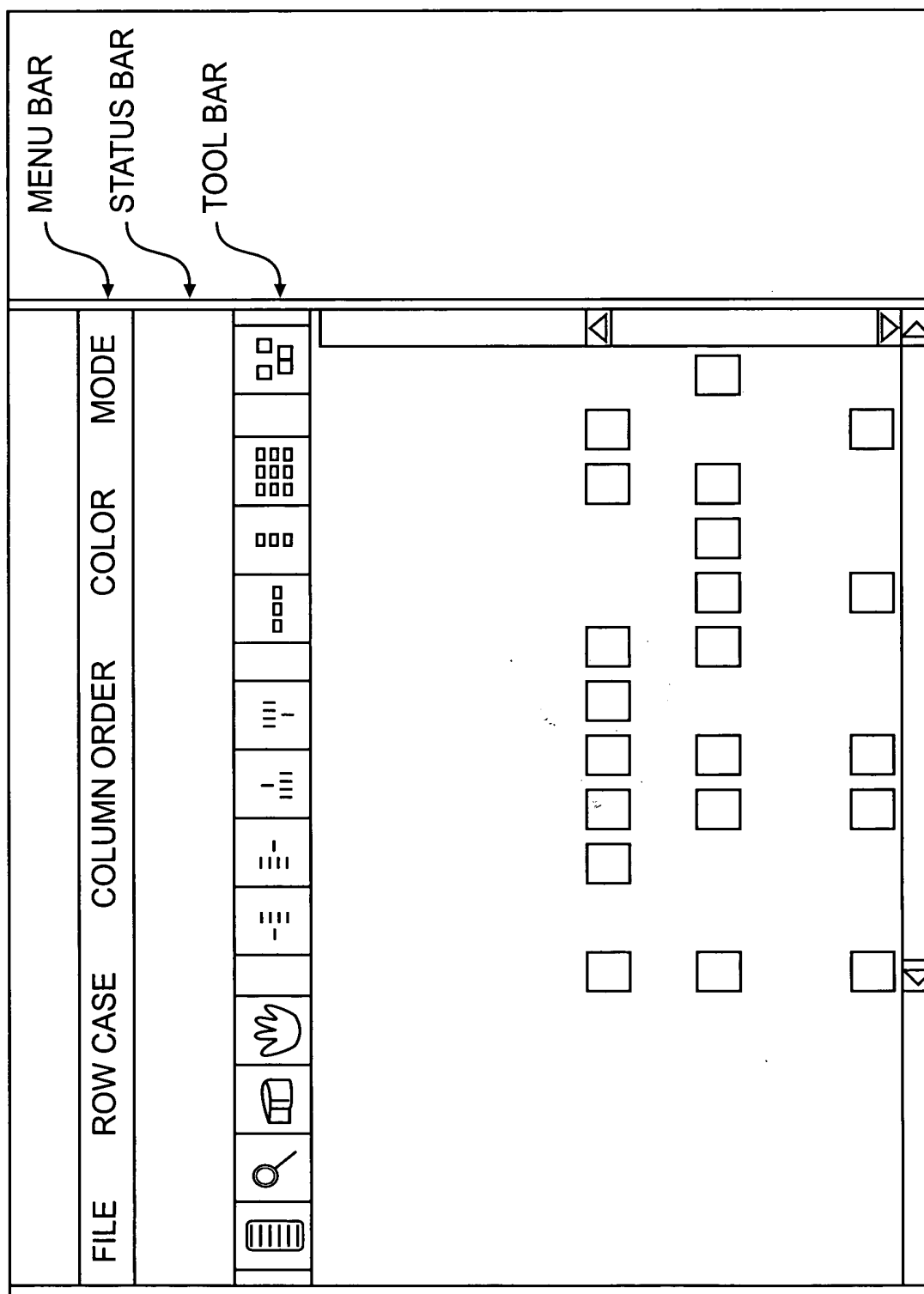


FIG. 19

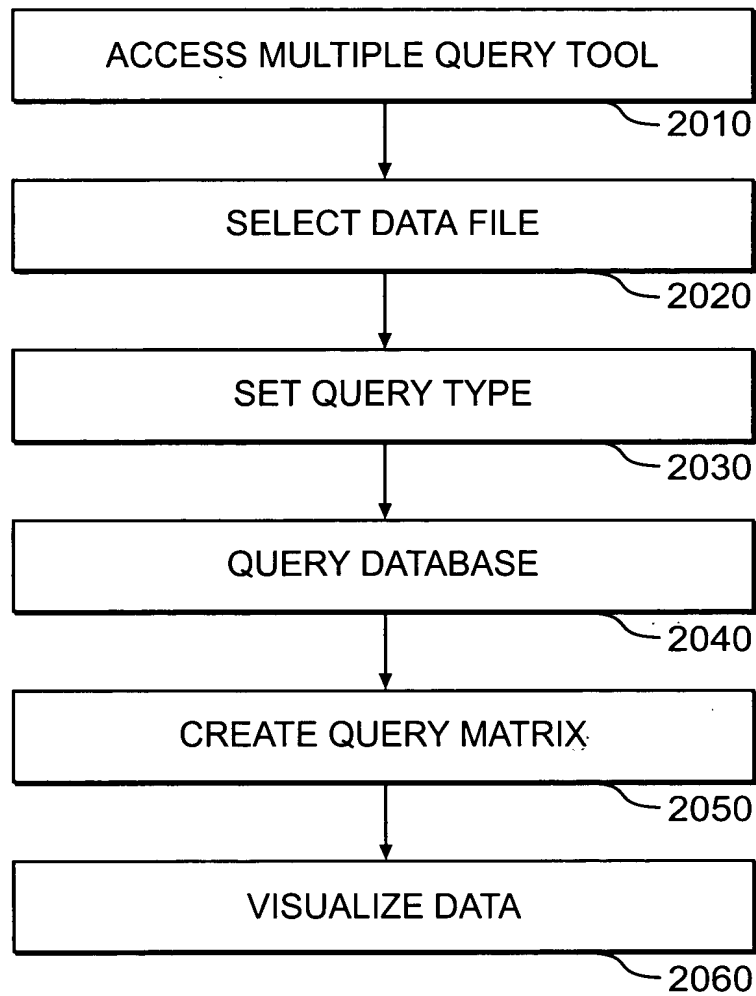


FIG. 20

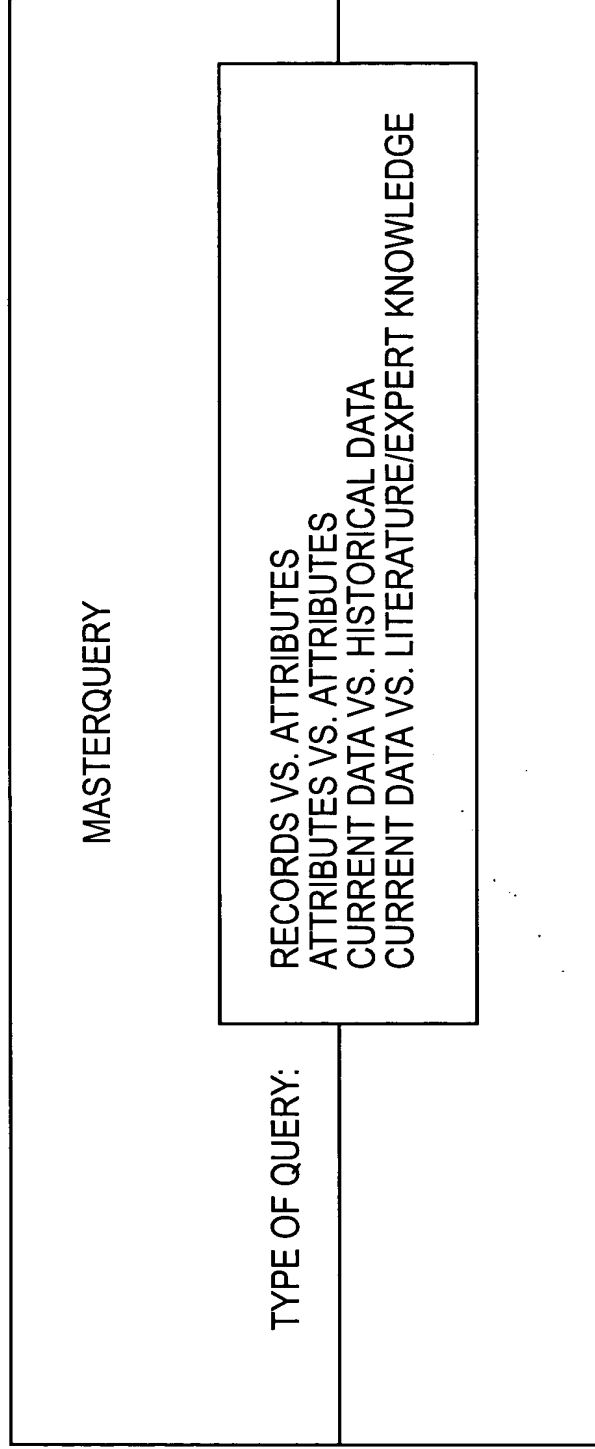


FIG. 21

RECORDS VS. ATTRIBUTES

☒ VOCABULARY WORD(S)

☐ VOCABULARY FILE

☐ CATEGORY FIELD(S)

☐ CATEGORY FILE

2210

2220

2240

2230

ATTRIBUTE SOURCES

TYPE IN WORDS, SEPARATED BY SEMICOLON

BROWSE

ADD

BROWSE

2250

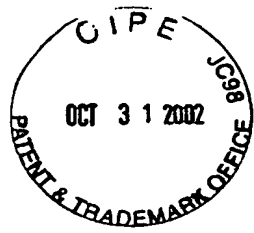
DROP DOWN LIST OF FIELDS

CLEAR

CANCEL

DONE

FIG. 22A



ATTRIBUTES VS. ATTRIBUTES

ROW ATTRIBUTE

☒ VOCABULARY WORD(S) TYPE IN WORDS, SEPARATED BY

☐ VOCABULARY FILE

☐ CATEGORY FIELD(S)

☐ CATEGORY FILE

COLUMN ATTRIBUTE

☒ VOCABULARY WORD TYPE IN WORDS, SEPARATED BY

☐ VOCABULARY FILE

☐ CATEGORY FIELD

☐ CATEGORY FILE

2260

FIG. 22B

CURRENT DATA VS HISTORICAL DATA

☒ PREVIOUS VISUALIZATION

☐ DATA MATRIX FILE(S)

HISTORICAL DATA FOR COMPARISON

☐ BROWSE

☐ BROWSE

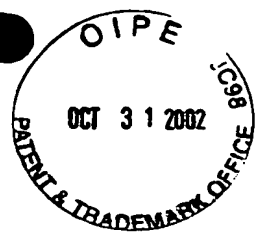
☐ CLEAR

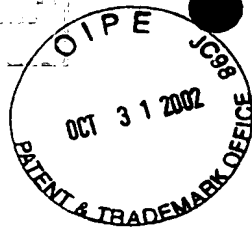
☐ CANCEL

☐ DONE

2270

FIG. 22C





	ATTRIBUTE_1	ATTRIBUTE_2	ATTRIBUTE_3	ATTRIBUTE_4	ATTRIBUTE_5	ATTRIBUTE_6
RECORD_1	1	1	1	1	0	0
RECORD_2	0	1	1	1	1	0
RECORD_3	0	1	1	1	0	0
RECORD_4	1	0	1	1	0	0
RECORD_5	1	1	1	0	1	1
RECORD_6	0	1	0	1	0	0

FIG. 23



	ATTRIBUTE1	ATTRIBUTE2	ATTRIBUTE3	ATTRIBUTE4	ATTRIBUTE5	ATTRIBUTE6
RECORD_1						
RECORD_2						
RECORD_3						
RECORD_4						
RECORD_5						
RECORD_6						

FIG. 24

	ATTRIBUTE1	ATTRIBUTE2	ATTRIBUTE3	ATTRIBUTE4	ATTRIBUTE5	ATTRIBUTE6
CLUSTER_1						
CLUSTER_2						
CLUSTER_3						

FIG. 25

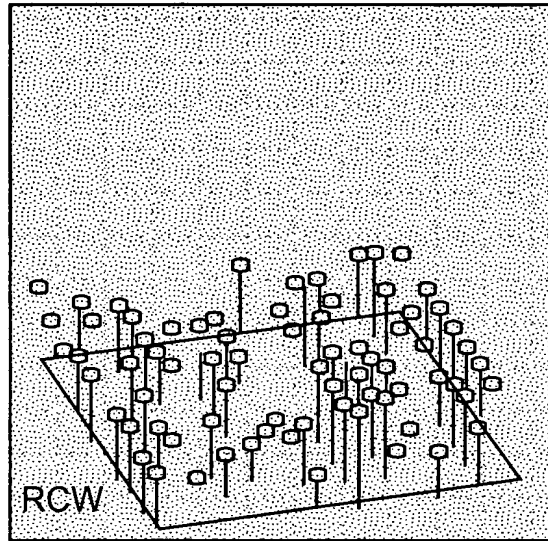


FIG. 26

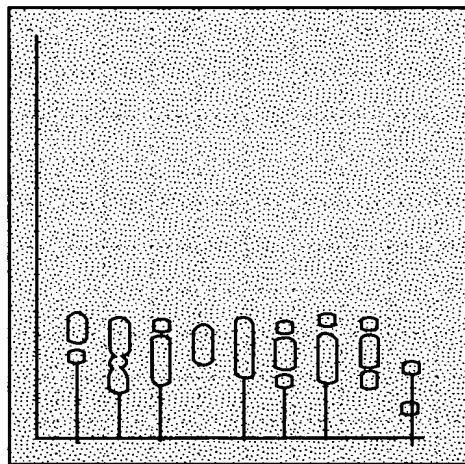


FIG. 27

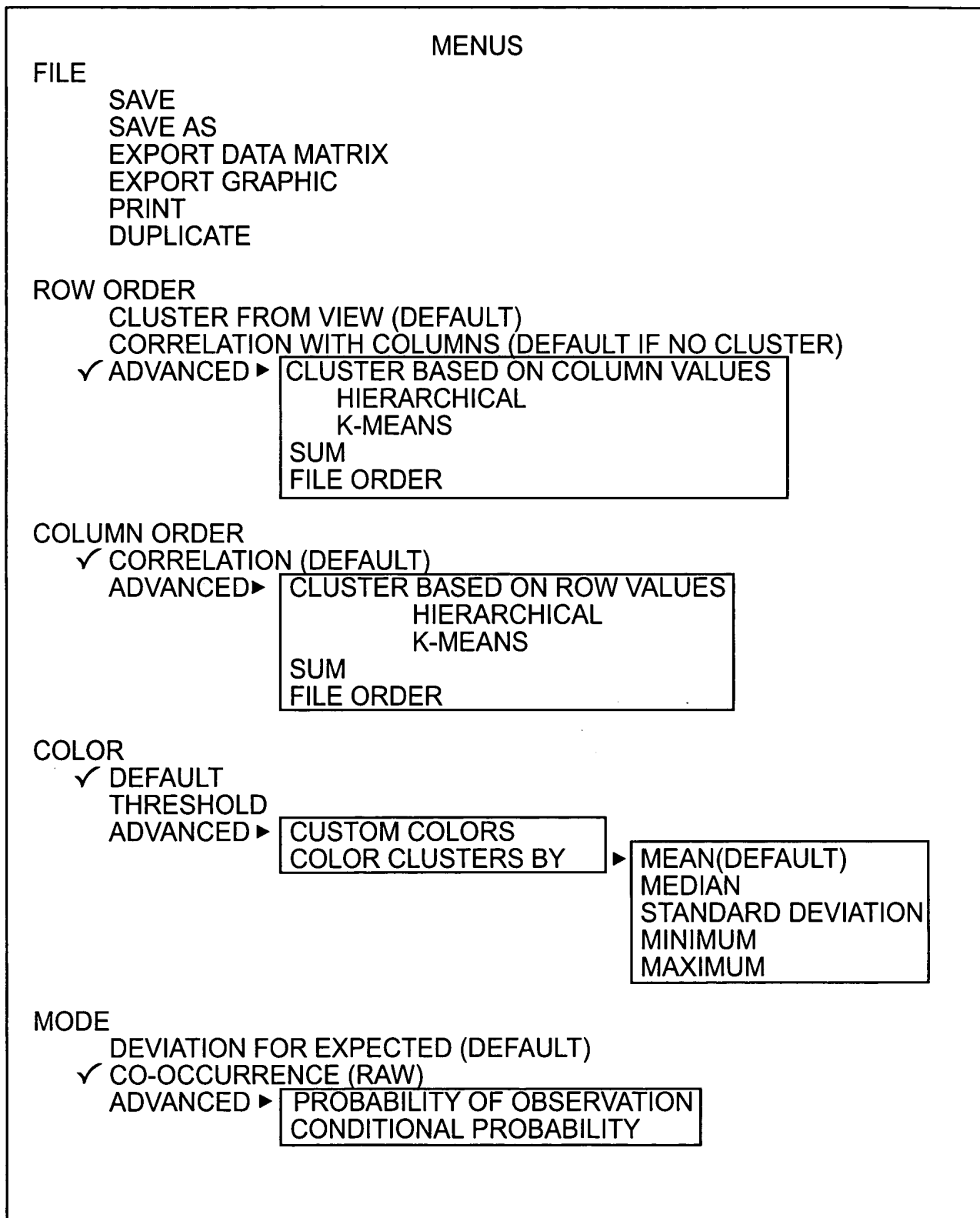


FIG. 28



TOOL BAR

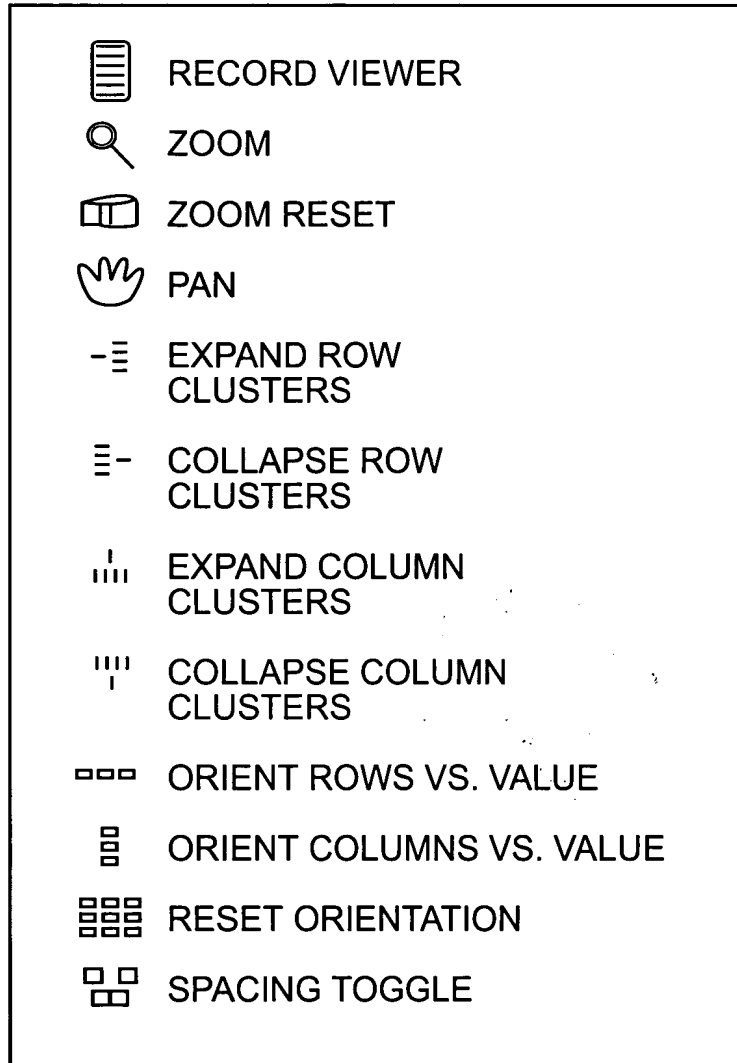


FIG. 29

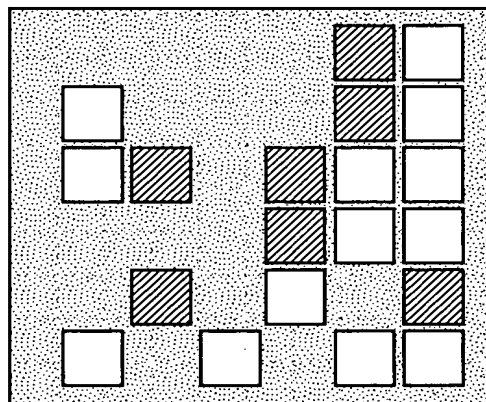
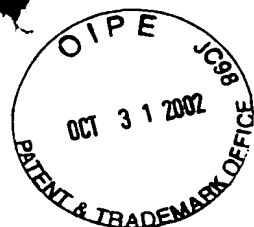


FIG. 30A

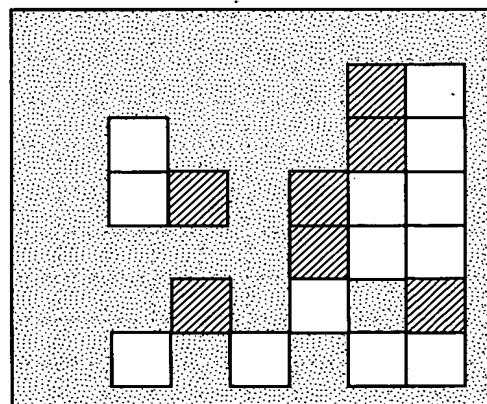


FIG. 30B